No. 85-1780

Supreme Court, U.S.
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IN THE

Supreme Court of the United States

October Term, 1985

BIC LEISURE PRODUCTS, INC. and
WINDGLIDER FRED OSTERMANN, GmbH,

Petitioners,

vs.

WINDSURFING INTERNATIONAL, INC.,

Respondent.

SUPPLEMENTAL APPENDIX
(OPINION OF THE DISTRICT COURT)

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EDITOR'S NOTE

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UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

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81 Civ. 254 (MEL)

WINDSURFING INTERNATIONAL, INC.,

Plaintiff,

and

JAMES R. DRAKE,

Intervenor-Plaintiff,

against

FRED OSTERMANN GmbH, et al.,

Defendants.

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83 Civ. 1691 (MEL)

AMF INCORPORATED,

Plaintiff,

against

WINDSURFING INTERNATIONAL, INC.,

Defendant,

and

JAMES R. DRAKE,

Intervenor-Defendant.

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83 Civ. 3774(MEL)

BIC Leisure Products, Inc., and Windglider Fred Ostermann, GmbH,

Plaintiffs,

against

Windsurfing International, Inc.,

Defendant,

and

James R. Drake,

Intervenor-Defendant.

And Related Actions

James R. Drake,

Cross-Claimant,

against

Windsurfing International, Inc.,

Cross-Defendant.

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LASKER, D.J.

At a social gathering in early 1967 two friends James Drake and Hoyle Schweitzer, then living in California, began discussing the idea of combining the sports of sailing and surfing to create a type of sailing surfboard. The requisite materials were collected in Drake's garage where a make-shift workshop was set up for production. By summer of that year the co-inventors were ready to "launch" their first "sailboard."[1] The craft featured a Bermuda sail with a curved boom on each side of the sail (i.e., a "wishbone" boom) joined by a universal joint to a modified surfboard hull. In March of 1968 Drake and Schweitzer, as co-inventors, filed an application for a United States patent which originally issued in January, 1970. In 1969 Schweitzer assigned his patent rights to Windsurfing International, Inc. ("WSI"), of which he is the Chairman of the Board of Directors. In 1973 WSI purchased Drake's rights in the patent. The patented sailboard is the focus of this dispute.

This litigation involves three consolidated actions relating to the validity, infringement and enforceability of United States Reissue Patent No. 31,167 ("the '167 patent" or "the patent"). All of the cases were tried to the bench in a single trial. In the first action (81 Civ. 254) WSI asserts that BIC Leisure Products, Inc. ("BIC"), AMF Incorporated ("AMF") and Downwind, Inc. ("Downwind")[2] are manufacturing and selling sailboards which infringe on the '167 patent. In the second, (83 Civ. 1691) AMF seeks a declaratory judgment that the '167

1. Since one of the issues to be resolved is whether "windsurfer" is a generic term for the craft we will refer throughout this opinion to the patented craft as a "sailboard".

2. Downwind relies on the defense of BIC and AMF to WSI's claims of infringement and did not actively participate in the trial nor did it submit a post trial brief. *See* Transcript at p. 8 (hereinafter "Tr. ___").

patent is invalid, unenforceable on the grounds of misuse and not infringed. In addition, AMF requests the cancellation of WSI's "WINDSURFER" and related trademarks on the grounds that they have become generic. Finally, in 83 Civ. 3774, brought by BIC against WSI, BIC seeks a declaration that the patent is invalid, unenforceable and not infringed.[3] BIC and AMF both assert that the patent is invalid because the claimed invention was obvious under 35 U.S.C. § 103. (1982).

For the reasons set forth below we conclude that the patent-in-suit is valid, that each of the claims in the patent has been infringed by the defendants; that WSI has misused the patent; and that the term "windsurfer" is a "common descriptive name".

I. Validity

A. *The Claimed Invention*

The field of art that includes the claimed invention is stated in the patent to be "the field of ships, particularly sailboats and iceboats, and the field of land vehicle sail attachments."[4] The patent claims a

> [w]ind-propelled apparatus in which a mast is universally mounted on a craft and supports a boom and sail. Specifically a pair of curved booms are arcuately connected athwart the mast and secure the sail therebetween, the position of the mast and sail being controllable by the user but being substantially free from pivotal restraint in the absence of such control.[5]

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3. Intervenor James Drake also filed a cross-complaint against WSI for, *inter alia*, fraud. That action is *sub judice*.

4. PX 1, Col. 1; DX 239, Col. 1. WSI's exhibits will be referred to as "PX —"; BIC's and AMF's will be referred to jointly as "DX —."

5. PX 1, "Abstract; DX 239, "Abstract".

By moving the hand-held rigging in various directions through the universal joint (which, in turn moves the center of effort ("CE") on the sail relative to the Center of Resistence ("CR") on the hull)[6] the craft may be steered without the use of a rudder.

Claims 15[7] and 20[8] are representative. Claim 15 reads as follows:

> Wind-propelled apparatus comprising body means adapted to support a user and wind-propulsion means pivotally associated with said body means and adapted to receive wind for motive power for said apparatus, said propulsion means comprising a mast, a joint for mounting said mast on said body means, a sail and means for extending said sail laterally from said mast comprising two opopsed booms secured to said mast for guiding said sail therebetween and adapted to provide a hand-hold for said user on either side of said sail while sailing, the position of said propulsion means being controllable by said user, said propulsion means being substantially free from pivotal restraint in the absence of said user, said joint having a plurality of axes of rotation whereby said sail free falls along any of a plurality of vertical planes upon release by said user.

Claim 20 reads:

> Wind-propelled apparatus comprising:
>
> body means adapted to support a user;

6. The CE is the imaginary point on the sail where a single force acting through it would have the same effect as all of the forces acting on the sail and the CR is the corresponding imaginary point on the hull where all of the hull forces may be deemed to be acting. *See* Tr. 40-41, 517-18.

7. DX 239.

8. *Id.*

wind-propulsion means pivotally associated with said body means and adapted to receive wind for motive power for said apparatus, said propulsion means comprising a mast, a joint for mounting said mast on said body means, a sail extending in one direction only laterally from said mast, and means for extending said sail laterally from said mast comprising two opposed booms secured to said mast for guiding said sail therebetween and adapted to provide a hand-hold for said user on either side of said sail while sailing, the position of said propulsion means being controllable by said user;

said propulsion means being substantially free from pivotal restraint in the absence of said user;

said joint having a plurality of axes of rotation whereby said sail free falls along any of a plurality of vertical planes upon release by said user;

said body means comprising a sailingboard adapted to support the user on water and in a standing position on either side of said sail while sailing;

said sail having a foot thereof extending from a first corner of said sail, at which said sail is secured to said booms, obliquely downwardly with respect to said booms toward said mast and toward a second corner of said sail which is positioned along said mast;

said booms being secured to said mast above said second corner of said sail.

The '167 patent is a reissue patent based on United States Patent No. 3,487,800 ("the '800 patent") and contains seven claims.[9]

As demonstrated by the representative claims, all of the claims of the '167 patent require the use of both the wishbone rigging and the universal joint. The sole issue raised

9. *Id.*

by BIC and AMF with respect to the validity of the patent is whether the combination of these two elements would have been obvious in 1967.[10] *See* 35 U.S.C. § 103 (1982).[11]

Whether the integration of the hand-held wishbone rigging with the vehicle swivel mast attachment is obvious as a matter of law depends upon several factual determinations: "(1) the scope and content of the prior art, (2) the differences between the prior art and the claimed invention, (3) the level of ordinary skill in the pertinent art, and (4) additional evidence, which may serve as indicia of non-obviousness." *Environmental Designs* v. *Union Oil Co.*, 713 F.2d 693, 695 (Fed. Cir. 1983), *cert. denied*, —— U.S. ——, 104 S. Ct. 708 (1984) (Markey, C.J.); *accord Graham* v. *John Deere Co.*, 383 U.S. 1, 17-18 (1966); 35 U.S.C. § 103 (1982).

B. *The Prior Art*

The parties agree that the art in this case, as stated by plaintiff's expert, Dr. Samuel Bradfield[12] is the design

10. Obviousness is determined as of the time of the invention. The parties do not dispute that here, the relevant time period is 1966-67. However, since the launching party held in August or September 1967 was the first time a universal joint was utilized in the craft and that date has been pointed to as the date the craft was both conceived and reduced to practice we refer to 1967 as the "time of the invention." *See* Tr. 1010; DX 42, ¶¶ 9-17.

11. 35 U.S.C. § 103 provides:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patent-ability shall not be negatived by the manner in which the invention was made.

12. Dr. Bradfield testified as an expert in "aerodynamics as applied to airfoils such as sailships and wings; [and] [s]econdly, in the design of sailboats." Tr. 32. He holds a Ph.D in Mechanical Engineering from the University of Minnesota. Dr. Bradfield received

(footnote continued on next page)

and construction of sailboards, surfboards and iceboats.[13] Further, with one exception, discussed below, there is no dispute as to which items of prior art are "reasonably pertinent to the particular problem with which the inventor was involved", *Stratoflex, Inc.* v. *Aeroquip Corp.*, 713 F.2d 1530, 1535 (Fed. Cir. 1983), i.e., within the scope and content of the prior art. The many items of prior art in this case are demonstrated in numerous technical articles, other United States patents, motion picture videos, still photographs, diagrams, drawings and a model of the sailboard of Kenneth Darby. However, the most significant items of prior art are (1) the article in the August 1965 issue of Popular Science magazine entitled "Sailboarding: Exciting New Sport" written by Newman Darby;[14] (2) the W.F. Crosby article printed in the August 1935 edition of Rudder Magazine entitled "The Wishbone Rig On Small Boats;"[15] (3) an article contained in a catalog published by the Herreshoff Manufacturing Company of Bristol, Rhode Island in the late 1930's entitled "The New 'Wishboom' Rig And Sail Plan"[16] and (4) "Yacht Sail Research," a paper presented by Halsey Herreshoff at the November 1966 symposium conducted by the Massachusetts Institute of Technology.[17] United States Patent

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a Bachelor of Science degree in Mechanical Engineering from Purdue University in 1941; a Master of Science degree in Aeronautics from the California Institute of Technology in 1943; and a degree of Professional Aeronautical Engineer from the University of Michigan in 1953. Currently he is a Professor of Mechanical Engineering at the University of Southern Florida, as well as president of his own company, Hydrosail, Inc., a company which is chartered to consult, design, fabricate, sail and participate in activities surrounding creation of hydrofoil systems, including the design of sails and rigging for sails. *See* generally Tr. 14-32.

13. *See* Tr. 1038.
14. DX 71.
15. DX 108.
16. DX 105, p. 25.
17. DX 232.

No. 3,057,316 owned by J.H.R. Hansen[18] and United States Patent No. 3,349,741 owned by R.R. Herbst,[19] disclosing dinghy-like sailboats, are also noteworthy although they are pertinent to a lesser degree.

BIC and AMF also assert that a "free-sail" sailboard created by Hugh Perrin constitutes pertinent prior art. In response, WSI contends that Perrin's work is not "prior" within the meaning of 35 U.S.C. § 102(g) (1982). Before analyzing the differences between the prior art and the claimed invention we consider whether the Perrin sailboard constitutes "prior" material under the statute. We conclude it does not.

Section 102(g) states:

> In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

The disputed reference is disclosed in drawings and notes made by Perrin dated February 4, 1967.[20] Perrin's work was constructively reduced to practice when he filed a patent application on May 15, 1968.[21] When these dates are matched with August (or September) 1967, the approximate date of Drake and Schweitzer's "launching party" and which we find is also the date when the patented craft was both conceived and reduced to practice,[22] it is evident that Perrin was the first to conceive of the subject matter of his "invention" but the last to reduce

18. DX 101.

19. DX 102.

20. DX 47; DX 48.

21. *See* DX 46.

22. *See* n.10, *supra*.

it to practice. Under these circumstances, Perrin's work would be "prior" within the meaning of the statute, and therefore it would be available as prior art in making the obviousness determination, *see Kimberly-Clark* v. *Johnson & Johnson*, 745 F.2d 1437, 1444-46 (Fed. Cir. 1984), only if Perrin was reasonably diligent in furthering his invention during the period immediately before Drake/Schweitzer's conception and ending with his own reduction to practice, here between August 1967 and May 15, 1968. *See Gould* v. *Schawlow*, 363 F.2d 908, 918 (C.C.P.A. 1966).

The evidence establishes that Perrin received a draft of a proposed patent application from his attorney which Perrin sent back with revisions on August 10, 1967.[23] Upon receipt the application was mistakenly misfiled in the attorney's office. On March 1, 1968 Perrin's attorney notified Perrin of the accidental misfiling.[24] Perrin responded by letter of March 24, 1968[25] stating "This reply, also, is a bit late. Don't be concerned about *your* delay. Believe me I have been very content to let the "Kite" board lie dormant. It has taken this long to revive it in my own mind." (Emphasis in original)

The party seeking to establish that a particular item fulfills the priority requirements of Section 102(g) has the burden of proving the existence of "that continuity of activity which constitutes reasonable diligence." *Gould* v. *Schawlow*, 363 F.2d at 918; *Naber* v. *Cricchi*, 567 F.2d 382, 385 (C.C.P.A. 1977), *cert. denied*, 439 U.S. 826 (1978). For the reasons set forth below we conclude that BIC and AMF have not met that burden as to the Perrin sailboard.

The March 24th letter from Perrin to his attorney constitutes an admission against BIC and AMF (who stand in Perrin's position for the purposes of establishing dili-

23. *See* DX 58.

24. *Id.*

25. DX 59.

gence) that between August 1967 and the end of March 1968 Perrin engaged in no activity related to actually reducing his "invention" to practice. Nor did Perrin take any steps toward *constructive* reduction to practice (i.e., filing his patent application) during the relevant period. The letter clearly indicates that during this period Perrin made no attempts to contact his lawyer to ensure that progress was being made toward filing his patent application. BIC and AMF have offered no proof to the contrary. Although Perrin was not responsible for the misfiling of the application we nonetheless conclude that allowing seven months to pass without any action to check on the status of the application does not demonstrate reasonable diligence. Accordingly, we hold that Perrin's work is not pior art as defined by 35 U.S.C. § 102(g).

C. *Differences Between The Prior Art And The Claimed Invention*

The Darby article[26] discloses a sailboard with a *kite shaped sail,*[27] a stabilizing daggerboard, a sail-rigging attached to the vehicle by a universal joint and a hand-hold consisting of a *single boom on one side of the sail* placed at a convenient height for the user. The reference discloses that moving the sail shifts the CE on the sail relative to the CR on the hull which allows steering the vessel without the use of a rudder. The article further discloses that to operate successfully there can be no external "vanging"[28] lines to interfere with the free movement of the rigging. (A vang is a line which usually runs from the "clew" of the sail, i.e., the corner of the sail where the lower part of

26. DX 71.

27. A useful glossary of sailing terms (DX 233) provided by Halsey Herreshoff, one of the defendants' expert witnesses, is attached hereto as Appendix A ("Appx. A").

28. *See* Appx. A, (defining "boom vang").

the sail and the edge away from the mast meet, to the deck to keep the boom from rising.) The Darby board is "self-vanging", i.e., self-contained, because the portion of the sail beneath the boom functions automatically as a vang.

The Crosby article[29] discloses a small dinghy-like sailboat with a stabilizing means such as a daggerboard, a rotatable mast and a high boom[30] type of *Bermuda sail*[31] extending laterally from the mast by *wishhbone booms.*[32] The portion of the sail below the booms function as an automatic vang. Crosby teaches that the self-vanging feature (which allows the sail to take on a proper airfoil shape) combined with the curved shape of the booms (which permit the sail to billow in either direction unrestricted by the booms) are largely responsible for the increased efficiency and speed associated with this type of rigging. The reference further teaches that this self-vanging characteristic would disappear if the booms were placed at the bottom rather than the middle of the sail.

The Herreshoff "Amphicraft" featured in the Herreshoff article,[33] similar to the Crosby boat, discloses a small dinghy-like sailboat with a rotatable mast and a high boom tape of *Bermuda sail* extended laterally from the mast by *wishbone booms.* A ball-shaped attachment at the end of the mast rotates in a ball-shaped socket in the bottom of the boat. The reference teaches that a further feature of the self-vanging wishbone rigging is that the tension in the sail area below the booms prevents the clew end of the booms from rising. The Crosby vehicle and the Herreshoff Amphicraft each contain all of the elements of the claimed invention with the exception of the universal joint.

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29. DX 108.

30. *See* Appx. A. (depicting *inter alia,* Bermuda sail.)

31. *Id.*

32. *Id.*

33. DX 105, p. 27.

The Herreshoff symposium paper[34] discloses three types of boom arrangements generally available in 1966 for consideration in selecting rigging for various design situations. One of the "Sailing Rig Choices" disclosed in the paper is the wishbone rigging.

Both the Hansen and Herbst references merely disclose sailboard-like hulls with conventional stayed masts and riggings.[35]

D. *Level of Ordinary Skill in the Art*

35 U.S.C § 103 establishes the test for determining obviousness as follows:

> A patent may not be obtained . . . If the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains . . . .

In evaluating obviousness

> [i]t is difficult but necessary that the decisionmaker forget what he or she has been taught at trial about the claimed invention and cast the mind back to the time the invention was made . . . to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art.

W.L. Gore & Associates, Inc. v. *Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983), *cert denied*, —— U.S. ——, 105 S. Ct. 172 (1984). Before determining whether it was obvious to one skilled in the art of designing and/or constructing sailboats in 1967 to combine a universal joint and a Bermuda sail with a hand-held wishbone rigging one must determine the "composite" of the hypothetical per-

34. DX 232.

35. DX 101; DX 102.

son of ordinary skill. *See, e.g, Stratoflex, Inc.* v. *Aeroquip Corp.*, 713 F.2d at 1538.

The level of ordinary skill in the art may be determined by considering all, or some of the following factors: "(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field." *Environmental Designs* v. *Union Oil Co.*, 713 F.2d at 696.

The only testimony as to the "profile" of a person of ordinary skill in the art in 1966-67 was provided by Dr. Bradfield, the plaintiff's expert. Bradfield testified that the relevant "art," i.e., "field of technology" was the design and construction of sailboats, surfboards and iceboats.[36] He stated that, in contrast to fields such as computer technology, aeronautical engineering or electronics, the design and construction of sailboats was not an art in which innovations were rapidly made.[37] Bradfield described the sophistication of the art as relatively low, defining it as more of a "craft" or "guild."[38] He testified that the educational level of those who work in the art encompassed a broad spectrum.[39] Although it was his opinion that a technical degree or formal training in sailboat design was unnecessary,[40] he nonetheless concluded that a person with a lifelong interest in sailing but no formal education in design and only two or three years of background in designing sailboats was of less than ordinary skill. To attain ordinary skill such a person, Bradfield stated, would need more background and training

36. Tr. 1038.

37. Tr. 1040.

38. Tr. 1042-43.

39. Tr. 1043.

40. Tr. 1044-45.

"either in practical experience and-on-the job training, or in study and practice as sort of an internship."[41]

On the undisputed testimony of Dr. Bradfield, *see Kalman* v. *Kimberly-Clark Corp.*, 713 F.2d 760, 772-73 (Fed. Cir. 1983), *cert. denied*, —— U.S. ——, 104 S. Ct. 1284 (1984) ("the usual way of determining [the level of ordinary skill in the art] is by referring to the subjective reaction of a person thoroughly familiar with the particular art and, if possible, one who practiced the art at the crucial time in question"), we find that the hypothetical person of ordinary skill in the art of sailboat design in 1967 had either a combination of several years sailing experience and several years of practical experience designing and/or constructing sailboats or, alternatively, he possessed a college degree in design or engineering as well as a general knowledge of sailing. Newman Darby, an individual with no formal training in sailboat design but who had a "lifelong" interest in sailboats and had, by 1967 built several such crafts,[42] is an example of a person in the first category.

One of ordinary skill is considered to have acquired the general knowledge shared by persons with the same level of skill in the art. *See, e.g, Kurt H. Volk, Inc.* v. *Foundation for Christian Living*, 534 F. Supp. 1059, 1068 (S.D.N.Y. 1982). Any probative evidence may be relied upon to establish the scope of general knowledge, even if the proof does not qualify as "prior art". *See Thomas & Betts Corporation* v. *Litton Systems, Inc.*, 720 F.2d 1572, 1580-81 (Fed. Cir. 1983); *Orthopedic Equipment Co., Inc.* v. *United States*, 702 F.2d 1005, 1011-12 (Fed. Cir. 1983). In this regard, Halsey Herreshoff, one of the defendants' experts testified that the state of the art was such that in 1967 it was well known that the Bermuda sail was the most efficient sail available[43] and it was common knowledge that

41. Tr. 1125-26.

42. *See* Tr. 217-21; 380-87.

43. Tr. 534-35.

the wind strikes both sides of a fore-and-aft sail such as the Bermuda.[44] He further testified that the normal method of sailing was for the operator to be positioned on the windward side of the sail (behind the sail facing in the direction of the wind) because the user is then able to use his body weight to counter the overturning moment of the rigging.[45] Herreshoff added that it was generally known that a vessel could be modified by changing the rigging:

> [Herreshoff]: In fact, it is our practice many times and has been, I think, for other naval architects, to sometimes take a boat that we've used and decide: Well, the rig is not perhaps the one that we would like and we discard that rig and put on a different one . . . .
>
> (The Court): And it was in 1966?
>
> [Herreshoff]: And it was in 1966, and I would say for a long time before. It is part of a naval architect's job to do such things.[46]

It is true that Herreshoff, a member of a family that was well known among sailing enthusiasts for their involvement with the sport, and who, by 1966 had received a degree in Naval Architecture from Webb Institute, had been an instructor in the Department of Naval Architecture at MIT for three years and who had already designed and built one sailboat,[47] is and was too qualified in 1966 to be considered of ordinary skill. Nonetheless his testimony was credible and relevant as to knowledge possessed by the average sailor. *Cf. In Re Farrenkopf,* 713 F.2d 714, 720 (Fed. Cir. 1983) (Expert opinion evidence regarding the state of the art admissible as evidence of the level of knowledge in the art). Moreover, many of the

44. Tr. 527-33.

45. Tr. 691-92.

46. Tr. 688-89.

47. *See* generally Tr. 489-99; 680-86; 717-19.

conclusions reached by Herreshoff were supported by WSI's own expert. For example, Dr Bradfield testified:

> Q. Wouldn't you agree with me that in, certainly as of 1966, that the Bermuda sail was by far the most popular sail?
>
> A. Yes.
>
> Q. Wasn't it the most popular sail because it was well-known to be the most efficient sail?
>
> A. If we are talking in the context of sailing yachts, then one would say that that's the case.
>
> When one thinks of a stayed mast and a conventional rig on a sailing yacht, then the Bermuda sail by that time was certainly chosen because it was the most efficient. It was proved so in the racing of yachts of that type.
>
> Q. By sailing by yachts, you would also include boats such as the Crosby boat, the Herreshoff boat, dinghies?
>
> A. I would include them in that general classification.
>
> Q. So sailing yacht virtually meaning any sailboat is what you're talking about?
>
> A. Yes.
>
> Q. Wasn't the kite sail of Darby a rather odd creature in 1966?
>
> A. Well, you know, it was known for many decades prior among New Englanders because of its use as a sail for ice skating with, but so far—
>
> The Court: You mean the kite sail?
>
> A. Yes, the kite sail, but so far as its use on sailboats is concerned, it was certainly an oddball, yes.[48]

Finally, an important portion of Herreshoff's testimony was corroborated by Newman Darby, whom we have found

48. Tr. 1169-70.

to have been a person of ordinary skill. In 1966 Darby corroborated, in writing, a letter to an attorney so that the lawyer could explore the patentability of the "Darby-board." Among other things the letter stated: "The sail may take on other configurations than the kite or triangular configuration, such as the Marconi-rig",[49] thus supporting Herreshoff's claim that one of ordinary skill knew that riggings could be substituted for one another.

In sum, we find that the person of ordinary skill in the art of sailboat design and construction would have known that a kite sail was not a type of sail ordinarily found on sailboats; that the Bermuda sail was one of the most popular and efficient sails used on yachts and small boats; that the wind strikes both sides of a Burmuda sail; that the most widespread method of sailing was to stand on the windward side of the sail and that it was a normal practice in the art to substitute one type of rigging for another.

E. *The Presumption of Validity and the Reissue Prosecution of the '167 Patent*

Under 35 U.S.C. § 282 (1982)[50] a patent is presumed valid and must stand unless the defendants demonstrate invalidity by clear and convincing proof. *American Hoist & Derrick Co.* v. *Sowa & Sons*, 725 F.2d 1350, 1360 (Fed.

49. DX 82. The letter was actually written by Newman Darby's brother Kenneth but reflects what Newman told Kenneth about the invention. Tr. 433-34; 441.

50. 35 U.S.C. § 282 (1982) provides in pertinent part:

> A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim. The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity. . . .

The statutory presumption is, of course, a rebutatable one. *See, e.g., Chore-Time Equipment, Inc.* v. *Cumberland Corp.*, 713 F.2d 774, 780 (Fed. Cir. 1983).

Cir. 1984); *Lindemann Maschinenfabrik* v. *American Hoist & Derrick Co.*, 730 F.2d 1452, 1459 (Fed. Cir. 1984). In making a determination as to the validity of the patent "[d]eference is due the Patent and Trademark Office decision to issue the patent with respect to evidence bearing on validity which it considered but no such deference is due with respect to evidence it did not consider." *Id.* at 1360.

In this case, the reissue prosecution of the '167 patent was a fiercely contested adversarial proceeding involving massive evidnce of prior art and extensive briefing and re-briefing of the issues.[51] The original '800 patent containing 14 claims was issued on January 6, 1970.[52] In October 1976 Schweitzer and WSI learned of the Darby article through WSI's German counsel who was then involved in the prosecution of a German application relating to the '800 patent.[53] On May 30, 1978 WSI filed an application for reissue.[54] Thereafter Sailrider, Inc., a competitor of WSI, filed a protest pursuant to 37 C.F.R. § 1.291.[55] Sailrider was later joined in protest by Kransco Manufacturing, Inc.,[56] a second competitor who, along with Sailrider, actively opposed the reissue throughout the prosecution.

When originally filed the reissue application contained only the 14 claims of the original patent.[57] All 14 claims were rejected over the Darby article by the PTO examiner in the First Office Action of January 30, 1979.[58] WSI then

51. *See, e.g.*, PX 10, Vols. A, B, C containing papers reresenting a condensed version of the reissue file.

52. PX 10A, Tab. 1, p. 8.

53. DX 22; DX 23.

54. PX 10A, Tab. 1.

55. PX 10A, Tab 6.

56. *See* PX 10B, Tabs 43, 45.

57. DX 239. (In brackets)

58. PX 10A, Tab 18.

cancelled claims 2-5 and 14 and added new claims 15-25. On July 20, 1979 the examiner again rejected all of the pending claims in the Second Office Action.[59] In addition to rejecting many of the claims as anticipated under 35 U.S.C. § 102 by Darby's work, certain claims which recited the use of the wishbone rigging in combination with the universal joint were rejected as obvious under Section 103 since, in the examiner's opinion, it would have been obvious to provide the Darby kite sail with a pair of opposed booms.[60] Following the Second Office Action WSI cancelled claims 18, 21 and 22, and added new claims 26-31. In a Third Office Action on February 29, 1980 all the claims were rejected by the examiner for substantially the reasons set forth in the previous two Office Actions.[61] Thereafter, WSI cancelled several additional claims and appealed the rejection of claims 10-13, 15-17, 19, 20 and 23-31 to the PTO Board of Appeals.[62]

On April 30, 1981 the Board of Appeals reversed the examiner as to claims 11, 13, 15-17, 19, 20, 23, 24, 30 and 31 stating:

> It is our opinion that it would not have been obvious to provide the kite sail of Darby with opposed booms secured to the mast bow in view of any of the applied prior art. Such a structure is not needed in the Darby device and it would have been following the Appellants' disclosure to apply such a rigging to the sail support structure of Darby. There must be a reason apparent, at the time the invention was made, to the person of ordinary skill in the art for applying the teachings at hand or the use of the teachings as evidence of obviousness will entail prohibited hindsight.

59. *See* PX 10A, Tab 29.

60. *Id.*

61. PX 10B, Tab 59.

62. *See* DX 164.

The Board concluded:

> The hand-held wishbone rigging combined with the vehicle swivel mast attachment produces, in our opinion, a unique sailing apparatus which functions with the user in a manner that is completely unrecognized in any of the art before us[,][63]

and returned jurisdiction of the reissue application to the examiner for action not inconsistent with the Board's decision.

On remand, however, the examiner re-opened the reissue prosecution on the basis of newly discovered prior art, including the Crosby article and the Hansen and Herbst patents.[64] After reconsidering the claims allowed by the Board of Appeals in view of the new references the examiner rejected and "finally rejected" (in two separate Office Actions)[65] claims 11, 13, 23, and 31. Notably, in addition to rejection on anticipation grounds, claim 23 was also rejected as obvious under Section 103 because in the examiner's opinion it would have been obvious to substitute a wishbone rigging for the rigging contained in the Hansen and Herbst references.[66] After the Second Office Action on remand (mailed August 13, 1981) WSI again appealed.

On February 9, 1982 the Board of Appeals affirmed the examiner's rejection of the claims.[67] As to the obviousness of claim 23 the Board agreed

> that it would have been obvious to apply the wishbone rigging of Crosby to the relatively flat sailing vehicles of either one of [the] Hansen or Herbst patents. The reference combination merely requires a substitution

63. *Id.* at 10.

64. PX 10C, Tab 110.

65. *Id.*; PX 10C, Tab 116.

66. PX 10C, Tab 110, ¶ 10.

67. PX 10C, Tab 132.

of one conventional rigging for another which we consider to be well within the skill of the art.[68]

WSI subsequently appealed the rejection of claims 11, 13, 23 and 31 to the United States Court of Customs and Patent Appeals ("CCPA") primarily on the question of "what meaning should be given to the word pivot?" The CCPA rendered a decision on July 1, 1982 affirming the Board's affirmance of the examiner's rejection of the disputed claims.[69]

The end result of the prosecution (of which the above summary provides only tht barest of synopses of the proceedings documented in the hundreds of exhibits contained in the file wrapper) was the '167 reissue patent containing claims 15-17, 19, 20, 24 and 30 which appear in the patent as claims 15-20 respectively.[70]

Notwithstanding the vigorously contested reissue proceeds defendants argue that in this case the decision to issue the patent should be discounted because the defendants have presented to this court various items of prior art, particularly the Herreshoff article and symposium paper, which were not before the Patent and Trademark Office ("PTO"). They also argue that deference should not be given to the Board's decision because the PTO overlooked the dispositive issue here, namely, whether it would have been obvious to substitute a Bermuda sail with wishbone rigging for the Darby Kite sail rigging. They maintain that the Board of Appeals' rejection of the obviousness argument solely on the ground that it would not have been obvious to add a second boom to Darby's kite sail does not address the core issue: whether it would have been obvious to change the *entire* Darby rigging.

This argument is unpersuasive. Although the article disclosing the Herreshoff Amphicraft was not before the

68. *Id.* at p. 8.

69. *See* DX 171.

70. DX 239; PX 1.

PTO, the defendants' own expert testified that the reference discloses little more than the Crosby boat,[71] which was before the PTO examiner on remand and before the Board during WSI's second appeal. As for the Herreshoff symposium paper demonstrating that the wishbone rigging was recognized as one of the building blocks that could be relied upon in sailboard design, the teaching of the reference was implicit in the prior art references before the PTO which disclose the wishbone rigging, e.g., the Crosby article.[72]

Our designation of the Herreshoff references as particularly pertinent to the obviousness question is not made because the art discloses new information not contained in the voluminous record before the Board, but rather because the article collects in one place some of the teachings otherwise scattered throughout the innumerable documents in evidence. Neither the Herreshoff references nor any of the evidence produced at trial that was not before the PTO is the type of evidence that "so clearly invalidate[s] a patent that the burden is fully sustained merely by proving its existence. . . ." *American Hoist & Derrick Co.* v. *Sowa & Sons*, 725 F.2d at 1359-60.

Nor are we persuaded that the PTO failed to consider the issue of rig substitution. The defendants' argument oversimplifies the depth of the Board's review and assumes the Board ignored the other issues raised in the parties' extentive briefs.[73] Moreover, despite its finding in the second appeal that it was within the skill of one with ordinary skill in the art to substitute one *conventional* rig for another, the Board nevertheless reaffirmed its original holding that combination of "[t]he hand-held wishbone rigging with the vehicle swivel mast attachment produces . . . a unique sailing apparatus. . . ."[74]

71. Tr. 560; Tr. 716-17.

72. DX 108.

73. The protestors alone filed 12 briefs during the reissue prosecution. *See generally* PX 10, Vols. A, B, and C.

74. PX 10C, Tab 132, p. 8.

F. *Obviousness*

We turn now to the critical question whether it would have ben obvious to one of ordinary skill with the pertinent prior art before him to replace the Darby kitesail with a Bermuda sail with wishbone rigging. The defendants assert that a person with ordinary skill would have known that the kite sail was not as efficient as the Bermuda sail and therefore the Bermuda sail substitution would have been an obvious improvement of the Darby board. They further maintain that once this "obvious" step was taken, it would have been apparent that a second (handhold) boom was needed on the opposite side of the sail since it was well known that the wind strikes both sides of fore and aft sails such as the Bermuda.

WSI asserts that none of the prior art references suggests the invention as a whole. They argue, moreover, that the objective indicia of non-obviousness in this case alone are sufficient to establish validity. WSI claims that the overwhelming commercial success of the invention, the recognition of the patent by WSI licensees, the defendants' infringement of the sailboard, the fact that the sport has gained worldwide recognition and the unexpected results produced by the patented sailboard all establish the non-obviousness of the invention. The defendants respond that none of these claims are probative here of non-obviousness.

With regard to the obviousness of use of the Bermuda sail and wishbone rigging, WSI's expert, Dr. Bradfield, made the following concessions:

> The Court: The specific question is: If you wanted to improve the vessel, wouldn't it have been obvious to improve the rigging?
>
> The Witness: Yes.
>
> Q. And if your're going to improve the rigging, wouldn't the natural obvious selection have been a Bermuda sail?
>
> A. Depending on what you wanted to do with it.[75]

75. Tr. 1177.

Although the defendatns' experts Herreshoff and Kirkman corroborated the testimony of Dr. Bradfield,[76] Bradfield's statements carry particular weight since he has no reason to testify favorably for the defendants.

However, in spite of the concession Bradfield testified that the performance of the patented invention was superior to the performance of Darby's board. In particular he emphasized that the *combination* of the wishbone rigging with the universal joint produced a vehicle capable of being maneuvered in a manner which far surpassed the capabilities of Darby's invention. Referring to a film admitted as demonstrative evidence to show the operation of the WSI sailboard, Bradfield testified that the Darby board was incapable of a number of the maneuvers performed by the patented sailboard.[77]

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76. *See, e.g.,* Tr. 700; Tr. 772-77.

77. The following dialogue is illustrative of Bradfield's testimony on the patented sailboard's performance:

> Wurst: Would a Darby board with footstraps have done that?
>
> A. I don't think so. One of the challenges—this is like snowskiing in a way. There seems to be no end to the challenges that open up in this sport as a result of the combination of effects.
>
> Here people—you can see that—they're trying to do loops. They have been trying to do 360 degree loops like an airplane for the last four years.
>
> I am told in the last few months people have succeeded in actually doing that, in doing a loop and landing and sailing out of it, so that—
>
> The Court: Is this by the increase of their own skill, you mean?
>
> The Witness: That's correct.
>
> The Court: There hasn't been any change in the craft, has there?
>
> The Witness: Not—detail changes, yes, but not basic changes—
>
> The Court: All right.

(footnote continued on next page)

The defendants conducted lengthy cross-examination of Bradfield aimed at showing that the advantageous results which he suggested were produced by particular embodiments of the invention and not the result of the universal joint/wishbone rigging combination. While Bradfield

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The Witness: —are required to do that. As you can see there, it was a definite instance of momentary support aerodynamically as he came off the top of that wave.

Q. Doctor, the maneuverability as this illustrates as he threads his way through those people in the water, could a Darby board maneuver that quickly?
No.

The Court: Do you have any idea what speed they may be going at?

A. Judging from the spray that's being thrown in the movies, I would guess they're going between 15 and 20 miles an hour.

The Court: Right.
The Witness: I think the maneuverability of these boards is really terrific. It's amazing the agility which can be exhibited with them.

Tr. 1111-1113.

On cross-examination the following exchange occurred:

Q. Let me ask you this question, then, Mr. Bradfield: This teaches that you can use a single boom in Mr. Schweitzer's and Mr. Drake's free sail system.
If that boom is on the windward side, these advantages that we have been discussing will follow, right?
A. No, not—well, if you limit it to the advantages which we have been discussing, namely, aerodynamic lift, counter railing, and creature comfort, yes.

The Court: Do I understand, for example, maneuverability would not be as effective [sic]; is that correct?
The Witness: That is correct.

Q. Why would the maneuverability be better in the—strike that.
You also testified about the ability of the Windsurfer to go through waves whereas the Darby board couldn't do that, is that correct?
A. That's essentially what I said, yes.

(footnote continued on next page)

agreed that some of the benefits were attributable to, for instance, a specific hull shape, he firmly maintained that because of the absence of the wishbone rigging the Darby board could not be manipulated in the same manner as the patented invention.[78]

In *In re Sernaker*, 702 F.2d 989 (Fed. Cir. 1983), the Court of Appeals for the Federal Circuit, reviewing relevant CCPA decisions concluded that the following related tests are appropriate standards against which to make an obviousness determination:

> (a) whether a combination of the teachings of all or any of the references would have suggested (expressly or by implication) the possibility of achieving further improvement by combining such teachings along the line of the invention in suit, and (b) whether the claimed invention achieved more than a combination which any or all of the prior art references suggested, expressly or by reasonable implication.

Id. at 994. The obviousness issue was before the *Sernaker* court on a direct appeal from the PTO Board of Appeals' refusal to grant a patent. However, a recent spat of Federal Circuit decisions addressing the obviousness question indicate that the same considerations are appropriate when

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Q. What is the reason for that?

A. The reasons are at least twofold: the Darby board hull is not well-designed to make its way through waves. It's a flat board. It is used primarily for planing in flat water.

Secondly, it is very difficult to maneuver the Darby board with enough agility, so to speak, to permit the board to be readily maneuvered through waves in which—in the way in which he usually does that in a small boat.

Q. Do you think these advantages of the—I gather, then, from your answer, if you put the Schweitzer and Drake rigging onto the Darby board, that it wouldn't be able to go through the waves like that?

A. Well, certainly not as well as it would on a Schweitzer board.

Tr. 1154-55.

78. *Id.*

applied by a district court making a *de novo* determination. *See, e.g., ACS Hospital Systems, Inc.* v. *Montefiore Hospital*, 732 F.2d 1572, 1575 (Fed. Cir. 1984); *W.L. Gore & Associates, Inc.* v. *Garlock, Inc.*, 721 F.2d at 1551; *Environmental Designs, Ltd.* v. *Union Oil*, 713 F.2d at 698.

Applying the *Sernaker* formula we find that the teachings of the references do suggest possibilities for improving the invention which Darby put within the public domain. The Crosby article and the Herreshoff article and paper disclose the use and advantages of fore and aft sails such as the Bermuda sail. Moreover, the testimony of the three expert witnesses, including Dr. Bradfield in particular, confirm that the Bermuda sail was one of the most popular sails available. Accordingly, one skilled in the art who had available the prior art references would have been able to surmise that the replacement of the kite sail with a Bermuda sail was one method by which the Darby board could have been modified to be more efficient. Further, having learned from the Darby references that the freesail system is steered by manipulating a hand-held sail, and armed with the knowledge that the wind hits both sides of all fore and aft sails, we conclude that it would have been apparent to one skilled in the art that it was necessary or at least extremely useful to add a second opposed boom to operate as a handhold to maintain control of the sail. Accordingly, the first *Sernaker* test is satisfied. Nevertheless, the tests are stated in the conjunctive. Under the second test "prior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teachings." *In Re Sernaker*, 702 F.2d at 995-96.

The defendants did not offer testimony to dispute Dr. Bradfield's assessments of the performance capabilities made possible by the combination of the universal joint and wishbone rigging. Nor do we find anything in any of the teachings of the references which suggests that the

combination of the two elements would lead to the maneuverability which appears to be the hallmark of the patented invention.[79] Indeed, although Darby was aware that different types of riggings could be substituted for one another, and that one possible rigging available was a Marconi (Bermuda) sail, after experimentation he explicitly rejected the Bermuda sail in favor of the kite sail because the Bermuda sail "seemed to be off-balance" and it was difficult to manage.[80] After reviewing the prior art, and considering the trial testimony (while also viewing the demonstrations of the operating ability of the Darby board and the patented craft) we conclude that the combination of the hand-held wishbone rigging with the universal joint produced a vehicle that performs in a manner previously undisclosed by any of the prior art references before us and indeed, a vehicle with a performance potential that is even now not yet fully realized. Accordingly, we conclude that the patented invention resulted in *more* than a combination suggested by any of the prior art references.

Moreover, objective indicia, which must be considered before a final determination on obviousness is reached, *see, e.g., Stratoflex, Inc.* v. *Aeroquip Corporation*, 713 F.2d at 1538; *In Re Sernaker*, 702 F.2d at 996, provide further evidence of non-obviousness.

WSI argues that in this case, the objective indicia alone establish non-obviousness. It relies on proof which establishes that since 1969, in the United States alone WSI

79. The defendants' argument that the maneuverability of the board was due to the addition of footstraps is unpersuasive. It is true that the footstraps allow the user to stay on the board during more complicated maneuvers bu the footstraps only function to allow the user to take advantage of the craft's performance capabilities which derive from the combination of the rigging and the universal joint.

80. Tr. 327. The defendants' argument that Drake and Schweitzer thought it was obvious to use a Bermuda sail with wishbone rigging (as, according to the defendants, their statements indicate), does not address the critical issue here, namely, whether it would have been obvious to one of ordinary skill in the art, which neither Drake not Schweitzer was.

and its licensees have sold nearly 122,000 sailboards for a net sales income of $62,500,000; that in 1984 WSI sold 21,450 patented sailboards here and abroad, producing $9,500,000 in net income;[81] that 12 companies have taken licenses under the United States patent and in recent litigation in the District of Nevada two additional companies have accepted a permanent injunction recognizing the patent's validity;[82] that the sport was included in the 1984 Olympics as a Medal Event,[83] and finally, that the defendants copied the invention.

The defendants do not substantially dispute the rather remarkable success of the claimed invention.[84] They rely, rather, on evidence of WSI expenditures for advertising and promotional devices to argue that WSI's sale rose at a rate directly proportional to its advertising efforts and that the commercial success of the patented sailboard is due to the company's promotional efforts and is not indicative of non-obviousness.[85] They assert that the development of "rotational molding", a new process for making the sailboard hulls, was another factor contrbuting to the success of the invention.[86] Relying on correspondence between WSI and its German manufacturers, the defendants also argue that the fact that twelve companies, eleven of whom are German, have taken licenses is not probative, because the German manufacturers were forced to take licenses if they wished to sell sailboards in the United States without risking an infringement suit brought

81. PX 13.

82. PX 17.

83. Tr. 1257-58.

84. We do not find the evidence of commercial success to be significantly diminished in probatave value in light of the testimony of WSI's president that "10-15% of gross receipts are from paraphenalia" used in connection to the sport, e.g., clothing and other gear. *See* Tr. 1221-22.

85. *See* DX 248; DX 248A.

86. *See* DX 265H.

by WSI in Germany.[87] The defendants claim that the situation in the United States, where numerous companies are selling sailboards without first obtaining a WSI license, further undermines WSI's assertions of widespread recognition of the patented invention. Finally, the defendants argue that in this case, the fact of infringement has no probative value.

We agree that the correspondence involving the German maufacturers suggests a variety of motivational factors which may have lead to the German licenses and that therefore the probative worth of the licenses as evidence of the recognition of the invention's merit is diminished. However, we find the remaining proof of the widespread recognition and use of the invention indicative of non-obviousness.[88] The high level of the public's acceptance of the sport provides significant evidence of the merits of the invention which go well beyond the effect of the com-

87. DX 188; DX 191; DX 192; DX 193.

88. The defendants assert that evidence of commercial success is only probative as to non-obviousness when there is a nexus between the success and the merits of the claimed invention. They further assert that in this case no such nexus exists because the claimed invention did not fulfill a long felt need.

> A nexus is required between the merits of the claimed invention and the evidence offered, if that evidence is to be given substantial weight enroute to conclusion on the obviousness issue. *Stratoflex, Inc.* v. *Aeroquip Corp.*, 713 F.2d at 1539; *accord Simmons Fastener Corp.* v. *Illinois Tool Works, Inc.*, 739 F.2d 1573, 1575 (Fed. Cir. 1984). Recent Federal Circuit decisions discuss separately the questions of whether there is a nexus between the claimed invention and commercial success, and whether the invention met an unfulfilled industry need. *See, e.g., Stratoflex, Inc.* v. *Aeroquip Corp., supra; Shelcore Inc.* v. *Durham Industries, Inc.*, 745 F.2d 621, 627 (Fed. Cir. 1984). Under these decisions, as we interpret them, while the required nexus *may* be established by evidence of an unfulfilled need, the two are not necessarily synonomous. Moreover, acceptance of the defendants' interpretation of the law would lead to the anomolous result that the commercial success of a completely novel invention could never be probative evidence of non-obviousness since such an invention does not always solve an existing problem to which the public has been anxiously awaiting a solution.

pany's promotional efforts. While WSI's advertising campaigns undoubtedly have been responsible for bringing the invention to the public's attention, we find the overwhelming participation in the sport to be at least in part attributable to the previously undisclosed operational features of the sailboard, and that a nexus therefore exists between the commercial success and the merit of the invention. Finally, the fact that numeous manufacturers have undetaken to copy the patented invention, notwithstanding the obvious risk of an infingement suit, rather than to copy the Darby invention, which is clearly within the public domain and carries no such risk of suit, is further evidence of the merits of the invention and additional support for the proposition that the combination of the elements resulting in the patented board was non-obvious. *See, e.g., Jones* v. *Hardy,* 727 F.2d 1524, 1531 (Fed. Cir. 1984).

In sum, we conclude that in this case the objective indicia provide evidence of non-obviousness, *see W. L. Gore & Associates, Inc.* v. *Garlock, Inc.*, 721 F.2d at 1555 ("The objective evidence of non-obviousness . . . may in a given case be entitled to more weight or less, depending on its nature and its relationship to the merits of the invention."), and that they support the result reached under the *Sernaker* test, i.e., the combination of the universal joint with the wishbone rigging was not obvious and therefore, the patent was validly issued.

II. Infringement

WSI asserts that all of the sailboard models manufactured and sold by BIC, AMF and Downwind infringe on each of the seven claims in the '167 patent. The defendants' common defense to WSI's allegations of infringement is that their sailboards are not covered by the patent because (1) the rubber hourglass shaped universal joint used on their models is not the same as WSI's metal universal joint and (2) the booms on their models attach

to an intermediate apparatus rather than "directly" to the mast. The portions of the claims to which the arguments are addressed read: (1) "... joint having a plurality of axes of rotation" and (2) [two opposed booms] "secured to said mast . . .", respectively.[89]

All of the defendants stipulated that, for the purposes of determining infringement, the BIC "DUFOUR WING" sailboard would represent all models sold by BIC, AMF and Downwind during the relevant time period with the exception that one of the AMF sailboards, the "TIGA RACE" ("TIGA"), has no daggerboard.

The defendants called no witnesses on the issue of infringement. Using claims 15 and 20 as representative, Dr. Youngdahl, WSI's expert,[90] demonstrated that the various parts of the BIC DUFOUR WING was described by the language of the claims. Youngdahl testified unequivocally (and several times) that the BIC board revealed a "joint having a plurality of axes of rotation". For example, referring to patent claim 15 he testified:

> Wurst: And finally, said joint having a plurality of axes of rotation. Does the joint have a plurality of axes rotation?
>
> (Question read)
>
> A. It does. The universal joint will permit the boom to pivot with respect to the hull an infinite num-

89. *See* DX 239, Col. 6. Although the claims are of varying scope, the distinctions are irrelevant to the issues in this action.

90. Dr. Youngdahl testified for WSI as a witness expert in "mechanical structures in general; secondly, in the mechanical structures and functions of small boats; and thirdly, . . . [as] an expert witness in the application of patent claims to accused structures." Tr. 114. Dr. Youngdahl received a doctorial degree in Mechanical Engineering from the University of Michigan in 1961. As an employee of "Mechanical Handling Systems" he handled patent matters such as participating in the decision to pursue a patent, from mid 1953 to 1970. He has in the past performed design work on ships and has sailed sailboats himself for a number of years. *See generally* Tr. 107-14.

ber of axes, as the boom is lying down with respect to the hull in this configuration, there is an axis that would go through the approximate center of the hour-glass universal joint. There are mold marks, and it would go approximately through a line perpendicular to those mold marks.

If I were to raise the boom up and pivot the boom 90 degrees from the direction it is in now, it would pivot along a different axis in the universal joint and that would be approximately through the mold marks.

Q. And finally, referring to the joint, whereby said sail free-falls along any of a plurality of vertical planes and upon release of said user, does this board of Exhibit 11 operate in that fashion?

A. It does. If the user standing on the sailboard lets go of the booms, the mast will fall in whatever direction it happens to fall along any one of a plurality of planes, and a number of those planes would be infinite depending on the exact drop at any one moment.[91]

Later, referring to the language contained in claim 20 Youngdahl testified:

> Wurst: Okay. Does the joint have a plurality of axes of rotation and then the rest, in the context, 'whereby said sail free-falls along any of a plurality of vertical planes upon release'?
>
> A. It does. If the mast were erectd vertically, it could pivot along an infinite number of axes to free-fall in an infinite number of vertical planes, depending on the direction of release.
>
> Q. So if it was released to the front of the boat, it would pvit (sic) about one axis?
>
> A. That's correct.
>
> Q. If it was released to the side of the boat, it would pivot about another axis?

91. Tr. 125-26.

A. It would.

Q. You add all of these together, and you have a joint having a plurality of axes of rotation?

A. You have.[92]

Finally, he stated:

> The booms [of the BIC DUFOUR WING] are attached to the mast. There is an intermediate member that's been fabricated as a separate piece between the actual boom tube and the mast, but the booms are attached to the mast.[93]

* * *

We turn, then, to whether the defendants' sailboards literally infringe on the patent.[94] A party alleging infringement has the burden of proving it by a preponderance of the evidenc. *Envirotech Corp.* v. *Al George, Inc.*, 730 F.2d 753, 758 (Fed. Cir. 1984). The meaning of the patent claims must first be defined as a matter of law and then a determination may be made as to whether the claims cover (fairly and accurately describe) the accused device. "Claims are normally construed as they would be by those of ordinary skill in the art." *Fromsom* v. *Advance Offset Plate, Inc.*, 720 F.2d 1565, 1571 (Fed. Cir. 1983).

We read the claims of the patent in the same manner as Dr. Youngdahl, whose testimony we found convincing and down to earth. The defendants do not dispute this, indeed, the only argument for non-infringement that the defendants have mustered is that their sailboards do not infringe on the '167 patent because, unlike the metal joint in the patented boards the rubber hourglass-shaped device contained in their models does not have a plurality of rotating

92. Tr. 134-35.

93. Tr. 193.

94. The defendants' argument that WSI is estopped from relying on the doctrine of equivalents is not addressed since we find that the patent claims are literally infringed. *See Graver Tank & Mfg. Co., Inc.* v. *Linde Air Prods, Co.*, 339 U.S. 605, 607 (1950).

"mechanical" axes.[95] The short answer to this proposition is that "[i]nfringement is determined on the basis of the claims, not on the basis of a comparison with the patentee's commercial embodiment of the claimed invention." *ACS Hospital Systems, Inc.* v. *Montefiore Hosp.*, 732 F.2d at 1578. None of the seven patented claims contain the word "mechanical" in describing the joint which attaches the mast to the hull.

Dr. Youngdahl provided credible and persuasive evidence that, except for the AMF TIGA, all of the defendants' sailboards, as represented by the BIC DUFOUR WING, are covered by each of the seven patent claims. As to the TIGA, Youngdahl testified that it is covered by all claims other than claim 18 since claim 18 recites the use of a daggerboard which is absent from the TIGA model.[96] The defendants having offered no evidence to the contrary, we conclude that WSI has proven by a preponderance of the evidence that the TIGA infringes on claims 15-17 and 19-20 of the '167 patent and that the remaining sailboards infringe on these claims as well as on claim 18.

III. Misuse

BIC and AMF assert that notwithstanding the validity of the '167 patent, or the fact of its infringement, the patent should not be enforced because WSI has exceeded the lawful scope of its patent rights. They base this claim on the provisions of Paragraph 10 of the United States patent license agreement between WSI and each of its eleven licensees, which states:

95. Indeed, the defendants do not address the issue of whether the booms of their sailboards are attached "directly" to the mast in their post-trial briefs. Nor does AMF raise in its brief the issue of whether some of the languge of the claims is "incomprehensible." In any event, we find that the language referred to is quite clear and understandable, as Dr. Youngdahl's testimony indicates. *See* Tr. 146-49; PX 19, pp. 15-16.

96. AMF asserts that the TIGA model is not covered by claim 17. This proposition is without evidentiary support in the record.

10. TRADEMARKS

> LICENSEE hereby acknowledges that the terms "WINDSURFER", "WINDSURFING", and "WIND SURF" and the logo which is attached hereto as Exhibit 3 are all valid trademarks. LICENSEE hereby agrees not to use any of the trademarks identified in this paragraph 10 in any form or fashion in its company name or any of its literature or advertising or promotional material or on any products whatsoever.[97]

A patentee, as the beneficiary of a public policy "to promote the Progress of Science and useful Arts", does not have the right to use the special privilege of a patent monopoly to secure rights not granted by the patent and that are contrary to public policy. *Morton Salt Co.* v. *G.S. Suppiger Co.*, 314 U.S. 488, 491 (1942). *See also Robintech, Inc.* v. *Chemidus Wavin, Ltd.*, 197 U.S.P.Q. (BNA) 657, 658 (D.D.C. 1978); *Panther Pumps & Equipment Co.* v. *Hydrocraft, Inc.*, 468 F.2d 225, 231 (7th Cir. 1972), *cert. denied*, 411 U.S. 965 (1973). For relief to be granted it is unnecessary for the alleged misuse to have resulted in injury to the party asserting the defense. The doctrine of patent abuse is equitable in nature. Accordingly,

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97. *See* DX 131-DX 141. All of the agreements contain the identical provision except for DX 134, which contains a comparable provision without, however, mentioning the term "Wind Surf." The defendants also assert that a provision of WSI's dealership Agreement (DX 178) which states:

> 13. That Center will not attempt to "palm off", "switch", or sell sailboards of competitive manufacture to any person(s) making an inquiry to Center about Windsurfer brand sailboards and that if he does so, Company may immediately cancel this Agreement

is further evidence of an improperly derived economic benefit. They maintain that the effect of this clause prohibits a WSI dealer from selling another brand of sailboard to any customer who inquires about "windsurfers." We do not find the clause to do so on its face, nor evidence in the record sufficient to determine if the defendants' interpretation of the effect of this clause is correct.

> [i]t is the adverse effect upon the public interest of a successful infringement suit in conjunction with the patentee's course of conduct which disqualifies him to maintain the [infringement] suit, regardless of whether the particular defendant has suffered from the misuse of the patent.

Morton Salt Co. v. *The G.S. Suppiger Co.*, 314 U.S. at 494; *accord Robintech, Inc.* v. *Chemidus Wavin, Ltd.*, 197 U.S.P.Q. at 661.

Recent Supreme Court decisions demonstrate that the Court has "unequivocally condemned the use of a patent as a beachhead from which competition in unrelated lines of commerce may be assaulted. . . ." *Panther Pumps & Equipment Co.* v. *Hydrocraft, Inc.*, 468 F.2d at 231; *cf. Blonder-Tongue Laboratories, Inc.* v. *University Foundation*, 402 U.S. 313, 343 (1971) (discussing series of cases in which the Court has condemned attempts to broaden physical or temporal scope of patent monopoly); *Lear, Inc.* v. *Adkins*, 395 U.S. 653, 670-71 (1969) (licensee is not estopped to challenge the validity of a patent despite "no contest" clause in agreement).

The defendants argue that WSI has used and is using its patent to exact from its licensees an agreement that the terms "Windsurfer," "Windsurfing" and "Wind Surf" are valid trademarks notwithstanding WSI's knowledge that the public was and is using the terms generically. They assert that WSI is deriving an impermissible economic benefit by improperly barring others from using these terms on *any* products, including such items as clothing and apparel. WSI answers that it reasonably believed its trademark was good; that the inclusion of the clause in the licensing agreements does not rise to the level of misuse; and that at most, the clauses are unenforceable.

The resolution of this issue must begin with whether the terms in the disputed provisions of the contract are generic. For the reasons set forth in Point IV we conclude that they are. It follows that Paragraph 10 which,

as we read it, restrains anyone but WSI from producing any product utilizing the terms "Windsurfer," "Windsurfing" and "Wind Surf", would, if enforced, confer upon WSI an economic benefit outside the scope of the monopoly granted by the '167 patent. Indeed, the possibility of a very real economic benefit flowing from the provision is supported by the testimony of Charles Tillson, WSI's President and Chief Operating Officer as well as General Counsel, who stated at trial that up to 15% of WSI's revenues is derived from the sale of articles displaying the disputed terms.[98] Nor can it be seriously doubted that the rights under the '167 patent, which grant a monopoly over the production and sale of the patented vehicle, do not include the right to enforce a trademark, particularly if the mark has become generic. *See Morton Salt Co.* v. *Suppiger Co.*, 314 U.S. at 491.

In sum, we conclude that Paragraph 10 has an "intrinsic[ally] inhibiting effect on competition" beyond the scope of the patent and that the provisions are unenforceable. *Robintech, Inc.* v. *Chemidus Wavin, Ltd.*, 197 U.S. P.Q. (BNA) at 661; *cf. Lear Inc.* v. *Adkins*, 395 U.S. 653. The remedy that generally accompanies a finding of misuse is to preclude the patentee from invoking the aid of the courts to enforce his rights under the patent for as long as the patentee continues the misuse and/or until the effects of the misuse have been purged. *Morton Salt Co.* v. *G.S. Suppiger Co.*, 314 U.S. at 492; *accord Robintech, Inc.* v. *Chemidus Wavin, Ltd.*, 197 U.S.P.Q. at 658. However, the mere existence of the unenforceable clauses do not necessarily rise to such a level of misuse that the *patent* is unenforceable. *Panther Pumps & Equipment Co.* v. *Hydrocraft, Inc.*, 468 F.2d at 232. The degree of WSI's enforcement of the provision is appropriate to consider in determining the level of misuse. *See id.*

In the case at hand evidence of the extent to which WSI sought to enforce Paragraph 10 is spare. Tillson testified

98. Tr. 1222.

at a deposition that he did not know of any WSI licensees currently using the terms "Windsurfer" etc., in violation of the agreement but if at any time a licensee did so it would be told to cease.[99] He added that one licensee, Mistral, had used "Windsurfing" in the past but had agreed, upon notification of improper usage, to discontinue and to sign an agreement with the added provision that "Licensee hereby agrees to cooperate with licensor in using the terms 'boardsailing' and 'sailboard' as generics."[100] We find this record insufficient to determine fairly the extent to which WSI sought to enforce the provision and the extent of any monetary gain to it.

Nor do we accept the defendants arguments that WSI's behavior was eggregious because WSI knew that the terms had become generic. It is true that at least by 1974 WSI knew that its trademark was threatened by common usage (*See* DX 10—1974 letter from Hoyle Schweitzer to Martin Spanger). Nonetheless notwithstanding the fact that AMF has submitted evidence sufficient to prove that the terms had become generic, we do not conclude that the evidence was so strong that WSI necessarily would or should have known that its mark had become a common descriptive name for the product. Diane and Hoyle Schweitzer both testified, based upon evidence that usage of the terms by those within the trade had been replaced with the "boardsailing" terms, that they believed WSI's policing procedures had been successful in saving the trademark.[101] We do not find their evaluations unreasonable. Notably, each of the 11 agreements was signed between 1981 and 1983, that is, during the period in which WSI's policing activities were at their peak.[102]

Because the doctrine of misuse is equitable in nature, the court has discretion in evaluating the patentee's actions

99. DX 266A—Tillson Deposition at p. 93.

100. *Id.* at p. 94.

101. Tr. 1325, 2298.

102. *See* n.97, *supra.*

and fashioning an appropriate remedy. *Robintech, Inc.* v. *Chemidus Wavin, Ltd.*, 197 U.S.P.Q. (BNA) at 661. In the instant action the question of damages has been bifurcated for later determination. It is appropriate to defer until then the resolution as to what relief, if any, WSI's misuse of its patent privilege warrants.

IV. Trademark

AMF seeks the cancellation of United States trademark registration Numbers 962,616 and 1,195,641 and partial or complete cancellation of United States trademark registration numbers 1,180,024 and 997,974.[103] All of the registrations contain the term "WINDSURFER". AMF asserts that "windsurfer" is a common descriptive name, within the meaning of 15 U.S.C. § 1064 (1982), Trademark Act Section 14, for the patented craft and is also used to describe a person engaged in the sport and that the related term "windsurfing" is a generic word describing the sport.[103] WSI maintains that "sailboard" is the generic name for the craft and that the generic terms for the sport and sportsman are "boardsailing" and "boardsailor," respectively.

A. *Testimonial Evidence*

The term "windsurfing," from which "windsurfer" was later derived, was first used to refer to the new sport in 1968 by WSI's then Seattle, Washington dealer Bert Salisbury. In 1969, Diane Schweitzer, Hoyle Schweitzer's wife, wrote to Salisbury praising his creativity and thanking him for the "very descriptive term."[104]

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103. AMF argues that the term "windsurfing" should also be declared generic, although AMF has not specifically requested such relief in its pleading. We consider the term "windsurfing" to the extent we find it relative to our disposition of whether WSI's "WINDSURFER" trademark has become generic. Resolution of this issue is deferred pending further discussion in conference.

104. DX 1077; Tr. 2050, 2053.

According to the testimony of Hoyle Schweitzer, "WINDSURFER" was the name for a particular model of the craft manufactured by WSI and introduced in the United States in 1969.[105] Schweitzer testified that from 1969 to 1976 WSI was the only company selling sailboards in the United States and that of the approximately 4,000 crafts sold over 95% were the "WINDSURFER" model.[106] Schweitzer stated that during this time period the individuals associated with WSI sometimes referred to their product as a "sailboat" but that the term was a "difficult" one because it did not accurately describe the invention. He added that through 1976 the term "sailboard" was specifically avoided out of fear that the public would interpret the word as referring, for instance, to a "Sunfish" or "Sailfish," sailboat type; products popular at the time.[107] Schweitzer testified that between 1969 and 1976 WSI's approximately 250 dealers were not restricted in their use of the term "windsurfing" as part of their business name and that, notwithstanding WSI's *post* 1976 policy to discourage its dealers from using the term, even now there is no practical way to remedy the situation.[108] Finally, Schweitzer testified that he recalls many comments made as late as 1983 by persons associated with WSI that trademark usage was "horrible,"[109] that is that the term was being widely used in a generic sense.

Diane Schweitzer testified for WSI and also was called as an adverse witness by AMF. She testified that in the early years there was no "generic" word for the craft,[110]

105. Tr. 2267. Between 1969 and 1976 WSI manufactured three sailboard models: WINDSURFER, BAJA BOARD and STAR.

106. Tr. 2269, 2267.

107. Tr. 2270-71.

108. Tr. 2287.

109. Tr. 2210.

110. Tr. 2150.

that in 1969 she referred to individual sportsmen as "windsurfers" and used the term in this manner until sometime in the late 1970's when she was informed that use of the term in a generic sense risked loss of its protection.[111] At some point in 1977 policing of the trademark began in earnest and everyone associated with WSI was instructed to use the term "sailboard" as the generic term for the craft.[112] She admitted that the attempt to convert to the new term was definitely not successful in 1977,[113] but was successful thereafter.[114] Mrs. Schweitzer added that she called the sport "windsurfing" until 1981.[115] Since then, she has referred to the sport as "boardsailing".

Mrs. Schweitzer stated that beginning in 1977 WSI began policing the trademark by writing letters as well as by orally communicating to those who "misused" it. She read all of the sailboard trade publications and contacted the publisher if she discovered "improper" usage of the mark, a procedure she continues to date. She added that the 1984 Sailboard magazines that she has seen use the terms "boardsailing" and "sailboard" and do not otherwise misuse the mark.[116]

David Yost, a defense witness, was a WSI dealer in Sacramento, California from 1975-1978. He testified that while he was a dealer he knew of no terms other than "windsurfing" and "windsurfers" to describe the sport and sportsmen, respectively.[117] He added that he ran a "windsurfing school," where he would distribute T-shirts with "windsurfing" prominently printed on them and

111. *See, e.g.*, Tr. 2312-13.

112. Tr. 2118, 2120.

113. Tr. 2120-21.

114. *See, e.g.*, Tr. 2325.

115. Tr. 2142-43.

116. *See, e.g.*, Tr. 2323-25.

117. Tr. 1964.

bumper stickers acquired from WSI proclaiming "Windsurfers do it standing up."[118]

Another defense witness, Jeffrey Ely, currently is the co-owner of "Sunsport, Inc.", a boat dealership in Greenwich, Connecticut which offers for sale a variety of sailboard models. Before opening this establishment Ely worked for 18 months as a retail manager in a small private marine store in Darien, Connecticut, which also sold sailboards. Ely testified that 80%-90% of the customers who call "Sunsport" to inquire about sailboards ask if he carries "windsurfers."[119] Although he agreed that he could not state definitely whether, in making such a request, the customer was referring to a particular sailboard *generally* or a particular *brand,*[120] he stated that his experience has been that customers referring to a particular sailboard generally refer to a specific model, for instance the "TIGA" or the "F-2."[121]

Ely further testified that when he was formerly with the Darien, Connecticut marine store he arranged to have the business listed in the "Yellow Pages" as selling sailboards. Despite the fact that the store sold no "WINDSURFER" products, when the new listing subsequently was published Ely discovered the business under the heading "Windsurfers."[122]

B. *Documentary Evidence*

AMF introduced into evidence seven binders containing almost 400 assorted documents. Although the binders are indexed by category, e.g., "Newspaper Articles," "Correspondence and Memoranda," the significance of the

118. Tr. 1960-63.

119. Tr. 2038.

120. Tr. 2043-44.

121. Tr. 2046.

122. Tr. 2038-39.

documents is more readily apparent when they are organized chronologically.

1969—1976

WSI's advertisements and promotional literature from this time period refer to the new sport as "windsurfing" and use the term "windsurfer" for a person engaging in the sport.[123] None of the literature uses the terms "sailboard" or "boardsailing". For example, one of the early documents sent by WSI to interested individuals announced "Windsurfing—A NEW CONCEPT IN WATER SPORTS!" and explained that "the board used by the WINDSURFER is called a BAJA BOARD" (which was one of the first sailboard models manufactured by WSI).[124] A 1974 magazine article contained an inset illustration of a WSI sticker displaying the slogan "WINDSURFERS DO IT STANDING UP,"[125] and the public was encouraged to "brighten [their] winter weekends" AT WINDSURFING SCHOOL.[126] Dozens of letters written by WSI to prospective customers, advertisers and dealers thanked them for their interest in the sport of "windsurfing"[127] and WSI vice president Diane Schweitzer sought to allay a customer's fear of danger in the new sport by stating "all of my children are avid windsurfers (aged 9, 13 & 16)."[128] During this time Mrs. Schweitzer was editor of a newsletter, which later developed into Windsurfing News, a magazine published by the Windsurfing Association, an organization of persons who had purchased WSI products. The January 1, 1974 issue declared "Wedding Bells for

123. *See generally* DX 100—DX 1015.

124. DX 10001.

125. DX 1011.

126. DX 1012.

127. DX 1077—DX 1098.

128. DX 1093.

Windsurfers'' and, in a separate portion of the issue asked the question ''aren't you happy your windsurfer doesn't require petrol . . .''[129]

Magazine articles and newspapers written between 1969 and 1976 which were unassociated with WSI also reported the advent of the new sport of ''windsurfing.'' Most of the articles described a sportsman as a ''windsurfer.''[130] For example, it was explained in the June 30, 1970 issue of the Minneapolis Star that ''[t]he windsurfer stands on the surfboard and holds the sail in his hands,''[131] while the October 24, 1976 edition of the New Orleans Times-Picayune described how ''[t]he windsurfer stands on the unsinkable board . . .''[132]

In a letter dated August 5, 1974 Hoyle Schweitzer wrote to Martin Spanjer of Ten Cate (a Dutch WSI licensee): ''After discussions with our trademark & patent attorney it becomes evident that we are in danger of losing trademark protection everywhere in the world unless immediate action is taken to follow correct trademark procedures.''[133]

1977—1980

WSI's promotional literature during these years still refers to the sport of ''windsurfing.'' The term ''windsurfer'' appears in the advertisements in reference to the brand but also is used to refer to the craft and to the sportsman. Various generic terms such as ''freesail system'' infrequently appear in the text of documents. The term ''sailboard'' is seen with increasing frequency toward the later part of this period.[134] An ad slick from approxi-

129. DX 1142.

130. DX 1159—DX1189.

131. DX 1160.

132. DX 1188.

133. DX 1094.

134. *See, e.g.*, DX 1016—DX 1030; DX 1150.

mately 1979 sent to WSI dealers begins with "WILL THE REAL WINDSURFERS PLEASE STAND UP" and ends "So remember, if you're going to Windsurf, do it on the original Windsurfer."[135] A WSI catalogue (copyright 1977) offered for sale a variety of windsurfing paraphernalia, including a WSI promotional film describing the sport as "windsurfing" and sportsmen as "windsurfers."[136] In 1978-1979 a San Francisco WSI dealer still offered for sale "WINDSURFERS DO IT STANDING UP" bumper stickers.[137] Later, in 1979-1980, WSI told the public such things as "Windsurfing" is "Beyond Surfing" and "DO IT—WINDSURFING" with no mention of the words boardsailing or sailboard.[138] At the same time a 1980 WSI press release announced a new WSI "SAILBOARD" the "WINDSURFER ROCKET," for the "AFFICIONADO WHO WISHES TO GO ONE STEP FURTHER IN HIS WINDSURFING EXPERIENCE."[139]

Magazines and newspapers published between 1977 and 1980 continued to write articles on "windsurfing," *e.g.*, *hoist a sail and try windsurfing* (Glamour Magazine, May 1978),[140] and articles continued to appear on both "types" of "windsurfers." *See, e.g., Dick Lambert, 64, windsurfer* (Modern Maturity Magazine, Oct.-Nov. 1977);[141] *A Windsurfer You Can Build* (Mechanix Illustrated, Aug. 1977);[142] *Watching the dusk windsurfers* (Magazine of Western Liv-

135. DX 1018. The date of this exhibit is not entirely clear. However the last few pages of DX 1013 suggest that the 1979 date is approximately correct.

136. DX 1022; Tr. 1960; 2104.

137. DX 1024, 1025.

138. DX 1026-1030.

139. DX 1032.

140. DX 1306.

141. DX 1304.

142. DX 1301.

ing, May 1979;[143] Time Magazine, July 30, 1979 ("super wind-surfers specialize in 'wave jumps' ").[144]

In 1977 WSI began sending letters demanding the cessation of "all use of the term 'WINDSURFING' or any other term which infringes" the trademark.[145] The letters met with mixed results.[146] The subject of WSI's August 25, 1978 newsletter "DEALER NEWS" was "HOW TO USE A TRADEMARK PROPERLY" and began with the bold-faced caption "WINDSURFER IS NOT A NOUN: IT IS A PROPER ADJECTIVE." The newsletter stated further "whenever possible, you should use the generic name (sailboard) in association with the trademark. . ."[147] Minutes from a WSI management meeting held December 3, 1979 report

> Diane [Schweitzer] then discussed the necessity to change our way of thinking to use the term 'boardsailing' instead of windsurfing. The purpose of this change is to familiarize our sailors with the term that will be used in the '84 Olympics. The concern is that sailors accustomed to hearing 'windsurfing' will not realize that it really is their sport.[148]

The minutes of a 1980 WSI dealer meeting included the comment from the midwest dealers: "We are not pushing the 'Real Thing.' People are asking dealers 'what kind of Windsurfer do you sell?' Sailors are asking other sailors 'What kind of Windsurfer do you sail?' "[149]

143. DX 1319.

144. DX 1321

145. DX 1034

146. DX 1036

147. DX 1103

148. DX 1104.

149. DX 1105.

1981—1984

In April 1981 WSI began publishing "WINDSURF" magazine. The magazine, which was meant to have "a more generic appeal to all people who were interested in boardsailing,"[150] was changed to "WIND SURF" by November 1981.[151]

Recent issues of sports magazines, including those devoted exclusively to the sport on the whole, refer to the sport as "boardsailing," to the craft as "sailboards" and to sportsmen as "boardsailors," as do the WSI advertisements contained in the publication.[152] Nonetheless publications not associated with the sport continue to use the terms "windsurfing" and "windsurfer" descriptively. *See, e.g.*, New York Times, Nov. 11, 1984 (article on "Club Med" announcing the resort has wind-surfing);[153] Wall Street Journal, July 31, 1984 (comparing the number of bowlers in the world—100 million people—to the number of wind-surfers—200,000);[154] San Diego Tribune, July 26, 1982 (heralding: "Young windsurfer proves a standout").[155]

Generic usage of the terms is not limited to print media. For example, the "American Sportsman Show" televised on April 1, 1984 told viewers, among other such references, that "Hawaii also attracts some of the very best windsurfers. . . ."[156] Nor is usage confined to entertainment media. The 1983 edition of *The World Book Dictionary* defines "windsurfing" as a noun: "the sport of riding over

150. DX 1128, p. 6; Tr. 2161.

151. DX 1151.

152. *See, e.g.*, PX 641—PX 646.

153. DX 1260.

154. DX 1258.

155. DX 1250.

156. *See* DX 1263.

water on a surfboard equipped with a sail—wind 'surf' er, n.''[157]

During this period WSI continued to dispatch policing letters. Even so, it continued to receive comments by WSI affiliated persons relating to the "misuse" of the trademark. For example, on January 25, 1983, Willen Hoyng, general counsel for WSI, wrote to Hoyle Schweitzer regarding Hoyng's recent visit to the New York Boat Show: "Trademark usage is still horrible (i . Windsurf lessons etc.) Films used were not bad but trademark use in films very often horrible."[158] A March 17, 1981 intercompany WSI memorandum contains the following complaint: "a prospective consumer doesn't know a Dufour from a Curtis [sailboards made by other manufacturers], etc. All he knows is that he wants a Windsurfer.[159]

C. *The Survey*

Dr. Hans Zeisel is a Professor of Law and Sociology Emeritus at the University of Chicago Law School. He has published many articles on the use of statistical analyses as legal evidence.[160] Before joining the law school Dr. Zeisel served for many years as research director for McCann-Erikson and the Interpublic Group of Companies, one of the world's leading advertising agencies.[161] Dr. Zeisel's testimony related to a survey which he conducted at AMF's request.[162]

157. DX 1342.

158. DX 1346.

159. DX 1106.

160. *See, e.g.*, Zeisel, *The Surveys that Broke Monopoly*, 50 U. Chi. L. Rev. 896 (1983); Zeisel, *The Uniqueness of Survey Evidence*, 45 Cornell, L. Rev. 322 (1960) (cited in the Federal Manual for Complex Litigation at p. 115).

161. *See* DX 1348, (Appendix H).

162. The survey report is contained in DX 1348.

The target population for the survey consisted of individuals between the ages of 16 and 40 and a probability sample, i.e., a sample which justified projection to the total United States population in that age range, was designed. Questions put to the persons interviewed were patterned on the questions put in the survey in *E.I. duPont De Nemours & Co.* v. *Yoshida International, Inc.*, 393 F. Supp. 502 (E.D.N.Y. 1975), commonly referred to as "the Teflon Survey."

Here, as in the Teflon Survey, the interviewees were asked whether each of eight product names, one of which was "windsurfer," tells the type of product or a name that indicates the brand.[163] The next question was: "Now, please tell me what kind of products these are."[164] In response to the latter question 58% of the 801 people surveyed gave answers indicating that they had no knowledge of what a "windsurfer" was. Of the 320 people who did know, 61.4% said it was a type of product while 35.8% said it was a brand name.[165] Separated by sex, the results showed that 64.5% of the men interviewed, who had some knowledge of the product and 56.7% of the women stated "windsurfer" was a type of product.[166]

On cross-examination Dr. Zeisel stated that in his opinion it was possible but highly unlikely that the result

163. Interviewees were told: "Most products on the market have two names. The one tells us what *type* of product it is. For instance, beer, or automobile or coffee. The other is its *brand name*, such as Budweiser, Chevrolet or Maxwell House. I am going to read a few names to you and would you please tell me whether you think it is a name that tells the *type* of product *or* a name that tells us what *brand* it is."

164. Dr. Zeisel testified that this question, which was not asked in the Teflon Survey, was asked here because the sailboard is a relatively new product. He added that in his opinion the test could only be applied properly to people who knew what they were talking about in answering the question as to what "windsurfer" was. *See* Tr. 2216-19.

165. *See* Appendix B.

166. *See* Appendix C.

of the survey, which he conducted on a nation-wide basis, would have been different if he had limited his survey to people living in coastal areas.[167] Nonetheless WSI argues that the survey is "fatally flawed" because, *inter alia*,[168] Dr. Zeisel surveyed the wrong "universe." The argument is based upon Hoyle Schweitzer's testimony that roughly 60% of WSI's sales are generated from the East, West and Gulf coasts and near the Great Lakes.[169] WSI correctly asserts that under the law the relevant population is that of "prospective purchasers," and that in this case, Schweitzer's testimony demonstrates that the "prospective purchasers" live in the geographic areas just mentioned.

WSI's argument has several flaws. The survey population was constructed so that it is representative of the geographic distribution of the population.[170] Since more than 50% of the population lives within 50 miles of one of the coasts or from the Great Lakes[171] the survey roughly corresponds with WSI's market penetration and reason-

167. Tr. 2237-38.

168. WSI also argues that the use of the disjunctive in phrasing the question (whether "windsurfer" is a type of product *or* a brand), incorrectly states the law because it does not account for the fact that a word can serve a dual purpose. This argument is unpersuasive. As the survey results indicate, individuals who believed "windsurfer" serves a dual purpose were free to, and did, respond by answering that the term could be both a product and a brand. It is true that the answers of the persons who responded in this manner were not included in the final tabulation but the minimal number of such responses would not have changed the survey results significantly. We have considered WSI's other attacks on the survey and find them equally without merit.

169. Tr. 2296.

170. *See* DX 1348 (Appendix A).

171. Of this we take Judicial Notice. *See* Appendix D (U.S. Department of Commerce, *Bureau of Census, Statistical Abstract of the United States*, 10 (1985)).

ably reflects the universe of prospective purchasers.[172] Moreover, WSI offered no evidence to rebut Dr. Zeisel's opinion that a survey limited to a coastal population would most likely not yield different results than those reached here.

Dr. Zeisel's testimony thoroughly explained his methodology in conducting the survey and the results it produced. Having closely examined the survey report, we find that it represents an objective and logical procedure for gathering information on the question at hand. Although the limitations inherent in any statistical predictions must be recognized, we nonetheless conclude that the survey tends to establish that "windsurfer" is generic.

* * *

Nearly five decades ago the United States Supreme Court stated that

> to establish a trade name in the term . . . the plaintiff must show more than a subordinate meaning which applies to it. It must show that the primary significance of the term in the minds of the consuming public is not the product but the producer.

Kellogg Co. v. *National Biscuit Co.*, 305 U.S. 111, 118 (1938). More recently the Second Circuit has clarified the test for determining when a term is considered to be within the public domain, explaining that: "to become generic the *principal* significance of the word must be its indication of the nature or class of an article, rather than an

172. AMF states in its post-trial brief that after the trial Dr. Zeisel ran an additional computer run based upon the data already gathered for the survey, limiting the respondents to those that resided in Coastal and Great Lake States. 75% of the persons interviewed lived in such states. Of those respondents correctly answering that windsurfer was associated with some type of boat device, 59.4% said it was a generic term, and 38.4% said it wa a brand name. *See* "POST-TRIAL BRIEF OF AMF INCORPORATED TRADEMARK ISSUES" (filed Feb. 22, 1985) at p. 29. This computation was not in evidence and therefore it was not subject to the testing provided by cross-examination. However WSI has not objected to the accuracy of the information.

indication of its origin." *King-Seeley Thermos Co.* v. *Aladdin Industries, Inc.*, 321 F.2d 577, 580 (2d Cir. 1963) quoting *Feathercombs, Inc.* v. *Solo Products Corp.*, 306 F.2d 251, 256 (2d Cir. 1962), *cert. denied*, 371 U.S. 910 (1962) (emphasis in original). The test focuses on the knowledge of the general consuming public, not merely on a class of buyers who are members of a particular trade. *See, e.g., Bayer Co., Inc.* v. *United Drug Co.*, 272 F. 505, 510 (S.D.N.Y. 1921); *In re Murphy Door Bed Co., Inc.*, 223 U.S.P.Q. (BNA) 1030, 1033 (T.T.A.B. 1984).

On November 8, 1984 15 U.S.C. § 1064, Trademark Act Section 14, was amended to read:

> A petition to cancel a registration of a mark, stating the grounds relied upon, may . . . be filed by any person who believes that he is or will be damaged by the registration of a mark . . . .[173]
>
> (c) at any time if the registered mark becomes the common descriptive name of an article or substance . . . . *A registered mark shall not be deemed to be the common descriptive name of goods or services solely because such mark is also used as a name of or to identify a unique product or service. The primary significance of the registered mark to the relevant public rather than purchaser motivation shall be the test for determining whether the registered mark has become the common descriptive name of goods or services in connection with which it has been used.* . . . (Emphasis supplied to highlight newly added portions)[174]

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173. The new legislation applies to all cases where there has been no final judgment. *See* S. Rep. No. 98-627, 98th Cong., 2d Sess., *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 5718, 5727.

174. On the eve of trial WSI moved to dismiss the trademark issues on the grounds of lack of case or controversy. The motion was denied. WSI again raises the issue in its post-trial brief. The fact that WSI has sent correspondence threatening to sue at least one of

(footnote continued on next page)

WSI concedes that as the documentary evidence submitted by AMF establishes, in the period from 1967-1977 WSI used the WINDSURFER trademark as a name for its product.[175] However, WSI asserts that because it also used the mark as a brand name during that period, for instance by affixing WINDSURFER labels to cartons the sailboards were packed in,[176] its "dual use" of the trademark was proper. From this premise, WSI argues that none of the documetary evidence promulgated between 1969 and 1977 is probative of whether the trademark is generic. In support of this proposition WSI relies on the first sentence of the new amendment to 15 U.S.C.A. § 1064 (c) which states: "A registered mark shall not be deemed to be the common descriptive name of goods or services solely because such mark is also used as a name of or to identify a unique product or service."

This imaginative interpretation of the 1984 amendment is contrary to the legislative history of the Act. The Senate Report on the amendment specifically states:

> A. Dual Purpose and Unique Products
>
> [I]t is clear that whether a product is unique does not determine whether a term associated with the product functions as a trademark or as a generic designation. Most firms, in fact, attempt to market and promote their products as unique in some way. The important question is whether the primary significance of the

---

AMF's dealers (Tr. 2205; DX 1068-DX 1069), along with the fact that the trademark issue is intimately connected with AMF's misuse defense (which AMF clearly has a right to assert), is sufficient in this action to create a "case or controversy" and we decline to overturn our earlier ruling. *Cf. Muller* v. *Olin Mathieson Chemical Corporation*, 404 F.2d 501, 504 (2d Cir. 1968) (justiciable controversy exists in patent cases when patentee has threatened plaintiff with infringement directly or indirectly).

175. *See* "WINDSURFING'S Post-Trial Brief As To Issues In Trademark Case" (filed Mar. 4, 1985), at p. 34.

176. Tr. 2281.

> term to the relevant consuming public is to identify a product which emanates from a single, albeit anonymous; source, or merely to identify the product itself. . . .
>
> As originally introduced, S. 1990 would have provided that a registered mark is not to be deemed the common descriptive name of a product "merely" because the mark is used as a name of or to identify the product. The Committee substitute changed the work (sic) "merely" to "solely" to make clear that while use of a mark to identify a unique product is not determinative of the purchaser's perception of the mark, evidence that the mark is used and promoted as a common name may be probative on the issue of genericness. See, for example, *Bayer Co.* v. *United Drug Co.*, 272 Fed. 505 (S.D.N.Y. 1921). The central inquiry remains, both before and after this litigation, whether the primary significance of the mark is to identify a product which comes from a single source—though the product be unique or the source anonymous—as opposed to identifying the product iselft.

S.Rep. No. 98-627, 98th Cong., 2d Sess., 8-9, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS 5725-26.

The legislative history of the amendment evinces what we find is a clear congressional intent to codify prevailing law.[177] That is, whether the disputed term is associated with a unique product, *see Bayer Co., Inc.* v. *United Drug Co.*, 272 F. at 505, or whether it is associated with a product manufactured by many companies, *see King-Seeley Thermos Co.* v. *Aladdin Industries, Inc.*, 321 F.2d 577; whether it is only one of several terms describing the prod-

177. By codifying the law Congress intended to rectify what it perceived as the confusion generated by "the four major" reasoning errors of the court in *Anti-Monopoly, Inc.* v. *General Mills Fun Group, Inc.*, 684 F.2d 1316 (9th Cir. 1982), *cert. denied*, 459 U.S. 1227 (1983). S. Rep. No. 98-627, 98th Cong., 2d Sess. 3-6, *reprinted in* 1984 U.S. CODE CONG. & AD. NEWS at 5720-23.

uct, *Loctite Corp.* v. *National Starch & Chemical Corp.*, 516 F. Supp. 190, 201 (S.D.N.Y. 1981), or indeed, whether it can be said to have a "dual use", *cf. Coca-Cola Co.* v. *Overland, Inc.*, 692 F.2d 1250 (9th Cir. 1982) (Customers requesting 'coke' not considered evidence of whether trademark was genric), the question that remains is whether the "*principal* significance of the word is to indicate the nature or class of an article . . . ." *King-Seeley Thermos Co.* v. *Aladdin Industries, Inc.*, 321 F.2d at 580. The 1969-1977 use of the term Windsurfer as a trademark is relevant to and probative of this proposition.

* * *

We conclude that the term "windsurfer" has become and is generic: that is, a common descriptive name within the meaning of 15 U.S.C. § 1064(c). In introducing the sport to the public, WSI's own promotional literature, its advertisements and its officers' admitted early generic use of the trademark taught the public to call the sport windsurfing and to associate the term "windsurfer" with both the craft and the sportsman. Indeed, through 1976 WSI provided no other meaningful terms for the public to use instead of "windsurfing" and "windsurfer." Further, the hundreds of generic uses displayed in the documents demonstrate that the mass media, which play an obviously important role in "educating" the public, readily adopted WSI's descriptive use of the terms to report on the new phenomonon. The testimony of Ely, the Connecticut boat dealer, regarding the customers' use of the words illustrates that the public learned well the lessons taught by WSI as to the definition of these key words. It is true that it could be argued that Ely's testimony should be given little weight since, as a competitor of WSI, he has an indirect stake in the outcome of the action. However, the admissions of WSI's dealers that their "customers don't know a Dufour from a Curtis"[178] and that they frequently

178. DX 1106.

ask about *types* of windsurfers[179] corroborate Ely's testimony, as to the public's perception.

Nor does the evidence establish that WSI's policing efforts were successful in changing the public's initial perception. It is true that by 1977 WSI had substantially ceased using the term windsurfer generically, but it continued to promote the sport as windsurfing until 1981. Even today, as Schweitzer admitted, no effective way has been found to prevent WSI's many dealers from using the term "windsurfing" descriptively. Moreover, as late as 1983 WSI's dealers and its general counsel were still complaining about the "horrible" misuse of the term by WSI and others. Further, the continued descriptive use of the words in newspapers and magazine articles, despite WSI's curtailment of generic usage, demonstrates that the media remain wedded to the use of the terms "windsurfing" and "windsurfer" rather than "boardsailing," "boardsailer" and "sailboard". The weight of the evidence is not significantly diminished by the fact that trade magazines, after some time, eventually adopted the boardsailing" terms; it is the perception of the relevant group of potential consumers, and not of those who are in the trade that is determinative as to whether windsurfer and windsurfing have become common descriptive terms. *See Bayer Co., Inc.* v. *United Drug Co.*, 272 F. at 510. Further, it is not unlikely that the trade publications' use of the "boardsailing" etc., terms is as reflective of a desire to maintain WSI's advertising business as of a recognition that "sailboard" is the popular name of the product.[180] Evidence that those outside of the sports industry adopted the boardsailing terminology is noticeably absent from the record. Finally, the evidence recited is supported by the Zeisel survey.

179. DX 1105.

180. The same considerations apply to the fact that there is an "American Boardsailing Industries Association" (Tr. 2021, 2273) and that the International Yacht Racing Union refers to the sport as "boardsailing" (Tr. 2277), evidence upon which WSI relies to maintain the trademark has not become generic.

We conclude that WSI's early descriptive use of its trademark put "windsurfer" within the public domain and later attempts at recapture failed to save the term from becoming generic.

Conclusion

In sum, we conclude that the combination of the hand-held wishbone rigging with the universal joint was not obvious; that claims 15-20 of the patent-in-suit are valid; that the saidboards of defendants AMF, BIC and Downwind infringe on each of the claims of the '167 patent except for the AMF TIGA which does not infringe on claim 18; that WSI has misused its patent to a limited extent; and that "windsurfer" is generic.

~~It is so ordered.~~ mel

Dated: New York, New York
July 15, 1985

Morris E. Lasker
U.S.D.J.

APPENDIX A

Glossary of Terms

aft: a direction towards the rear or the stern of the boat

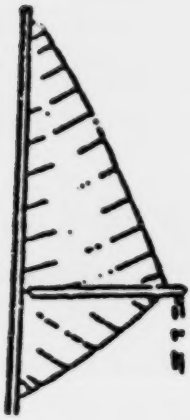
arcuately connected: connected such that the resulting structure is curved or bent like a bow

athwart: positioned across

beam reach: sailing in a direction approximately perpendicular to the wind direction

Bermuda, Marconi or Leg-o-Mutton sail and rig (Low Boom):

Bermuda, Marconi or Leg-o-Mutton sail and rig (High Boom):

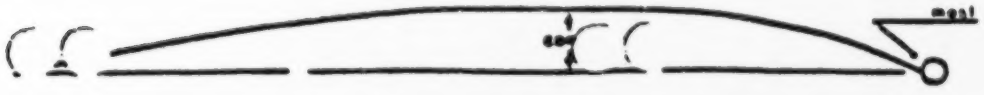


boom: a control or constraint device used to maintain or adjust the leech length and to control the shape of the sail

boom vang: something used to prevent a boom from rotating upwards and thus to maintain the leech length constant

bow: the front of the boat

broad reach: sailing in a direction approximately 135° from the direction from which the wind is blowing



centerboard: a board lowered within a slot in the hull by rotation about a pin. a type of stabilizer

centerline: an imaginary line extending from the front of the vehicle to the back of the vehicle

Center of Effort (CE): a point on the sail upon which it can be imagined all of the wind forces acting upon the sail are concentrated

Center of Lateral Resistance (CLR): the underwater center of dynamic pressure

cleat: a fitting around which a line is secured

clew: the corner of a sail where the foot and leech meet

close-hauled: this is the closest course the boat can sail towards the wind

close reach: sailing in a direction approximately 70° from the direction from which the wind is blowing

dagger-board: a board lowered by sliding through a slot in the hull. a type of stabilizer

dinghy: a small, open boat sometimes having a sail

draft: the offset or fullness of the airfoil shape of a sail

foot: the lower part of the sail

fore; forward): a direction towards the front or the bow of the boat

Gaff sail and rig:

gooseneck: a fitting or joint having two or three axes of rotation that connects the boom to the mast in a Bermuda or Marconi sail and rig

gybe: change from one tack to another by turning the stern through the wind

head: the upper part of the sail

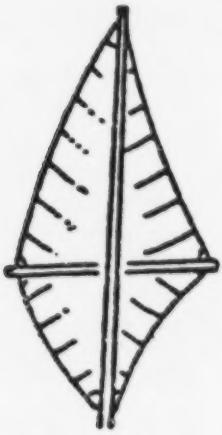
hull: the structure of the boat which contacts the water and which supports the passengers or the users of the sailboat

jam: a fitting in which a line is secured

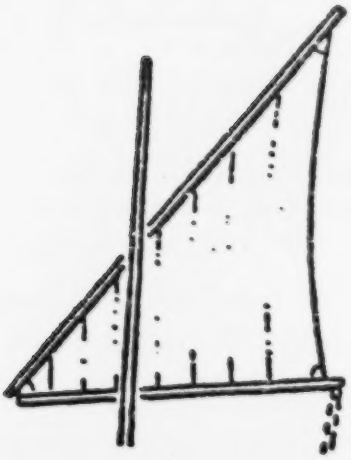
joint: something which connects two elements together either rigidly or so as to be moveable or; the place of the connection

keel: generally a weighted flat surface connected to the underside of the hull and aligned with the centerline of the boat. a type of stabilizer

Kite sail and rig:



Lateen sail and rig:



leeboards: flat boards connected to the sides of the hull. a type of stabilizer

leech: the edge of a sail away from the mast or; the leeward edge

leech length: the straight line distance between the clew and the head of the sail

leeward: the direction to which the wind is going

line: a rope which is part of the rig

luff: the edge of a sail at the mast (e.g. Bermuda or Marconi sail) or the windward edge (Square sail, spinnaker or Kite sail)

mast: the vertical spar which supports the sail and the other sail supporting structure

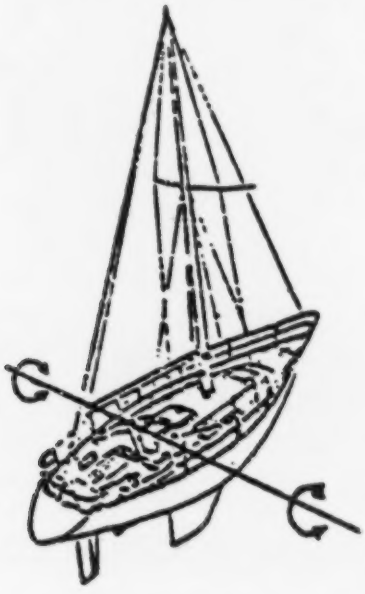
mast foot) or mast) heel): the lower end or base of the mast

mast head: the top end of the mast

mast step: the area on the hull which adjoins the mast heel

outhaul: a line which holds out the foot of a sail

pitch:



pivot: to rotate about a point along any one, two or three axes of rotation

port: a direction towards the left of the centerline of the boat while looking foward

reaching sailing across the wind: sailing in a direction generally across the wind direction. reaching is the fastest point of sailing

rig: the solid structure supporting the sail plus the wires, ropes and other items used to support and control the sail

roll:

rudder: a structure generally connected to the stern of a boat which can be rotated so as to steer and maneuver the boat

runabout: a small powerboat

running with the wind)
sailing before the wind) : sailing in a direction which is generally in the same direction as the wind
sailing downwind)

sail: an airfoil shape, usually made of cloth used to provide propulsion for a boat when blown by the wind

sailboat: a boat propelled by a sail

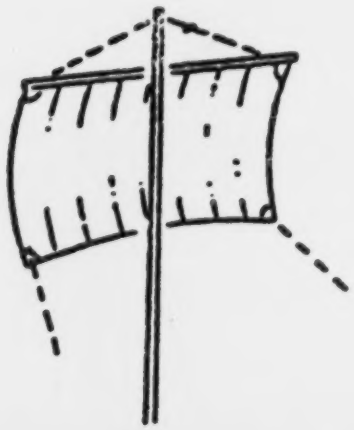
ship: an ocean-going vessel

skeg: a structure which is generally connected to the stern of a boat and is useful in resisting yawing

small yacht: a sailboat less than 25 ft. (8m)

spar: a general term for any wood or metal pole used to carry or to give shape to a sail or sails

Square sail and rig:



stabilizers: devices connected to the hull which extend into the water and improve the stability of the boat so that it will be less likely to roll or move sideways in the water

starboard: a direction towards the right of the center-line while looking forward

stern: the back of the boat

swivel: a coupling or fastening which allows the element attached to it to turn freely around an axis of rotation

tack (noun): the corner of a sail where the luff and foot meet

tack (verb)) tacking): sailing in a zig-zag direction towards the wind

uphaul: a line used to pull or hold something up

weather) wind-) ward): the direction from which the wind is coming

wishbone boom: a boom that completely encircles the lower part of the sail

yaw:

APPENDIX B

5. *The Main Result*

The following table shows the results of the present survey.

Table 1

Brand or Generic Name?

	Generic	*Brand*	*Do Not Know or Both*	*Number of Respondents** Base (= 100%)*
STP	15.4	84.6	—	(750)
Thermos	53.3	44.1	2.6	(669)
Margarine	90.0	9.8	0.2	(771)
Jello	26.7	71.0	2.3	(752)
Refrigerator	94.1	5.9	—	(786)
Windsurfer	61.4	35.8	2.8	(320)
Coke	13.9	85.8	0.9	(795)
Aspirin	88.5	11.1	0.4	(791)

** Actual case base—those who understand what product each name referred to.

APPENDIX C

The overall results for the term Windsurfer, together with the special tabulation for male and female respondents are presented in Table 2.

Table 2

Windsurfer: Brand or Generic Name?

	Total	*Men*	*Women*
Generic	61.4*	64.5**	56.7***
Brand	35.8°	31.8°°	41.6°°°
Do not know	2.8	3.7	1.7
	100%	100%	100%
Number of respondents	(320)	(163)	(157)

The Probable Errors for the six figures in the top two rows were as follows:

*± 5.5 **± 7.5 ***± 7.9

°± 5.4 °°± 7.3 °°°± 7.9

Probable Error roughly means that the odds are 19 to 1 that the true population value falls within its range.

APPENDIX D

10 Population

No. 8. Resident Population and Population Density in Counties Within 50 Miles of Coastal Shorelines: 1940 to 1980

[As of April 1 and based on census data. Excludes Alaska and Hawaii. Covers 611 counties and independent cities which are entirely or substantially within 50 miles of U.S. coastal shorelines. Great Lakes region includes St. Lawrence River]

Year	Conterminous U.S. total	Counties in coastal regions					Balance of conterminous U.S.
		Total	Atlantic	Pacific	Great Lakes	Gulf of Mexico	
Land area, 1970 (1,000 sq. mi.)	2,894	409	132	110	134	84	2,486
POPULATION							
1940 (mil.)	131.7	60.8	28.9	7.5	16.9	4.5	71.2
1950 (mil.)	150.7	73.5	34.6	11.5	21.5	5.8	77.2
1960 (mil.)	178.5	92.7	41.7	16.8	25.4	7.8	85.7
1970 (mil.)	202.2	108.5	46.2	21.5	29.3	9.5	93.6
1980 (mil.)	226.5	116.4	50.7	28.4	30.8	12.6	110.7
1940 (percent)	100	46	22	C	13	3	54
1950 (percent)	100	49	23	8	15	4	51
1960 (percent)	100	52	23	9	15	4	48
1970 (percent)	100	53	23	11	15	5	47
1980 (percent)	100	51	22	11	13	6	49
Population per square mile:							
1940	44.4	139.2	244.4	64.1	145.9	44.8	28.5
1950	50.5	167.2	292.3	97.5	182.9	69.8	30.9
1960	59.2	198.5	341.6	142.7	197.3	93.1	34.3
1970	69.2	232.9	389.4	182.5	218.1	101.1	37.6
1980 [1]	78.9	263.3	414.9	215.8	229.4	134.1	48.8

[1] Based on 1970 land area.

Source: U.S. Bureau of the Census, unpublished data.

Certificate of Service

This Supplemental Appendix to BIC Leisure Product's Petition for a Writ of Certiorari has been served upon Respondent by mailing copies thereof to Harold E. Wurst, Esq., Nilsson, Robbins, Dalgarn, Berliner, Carson & Wurst, 707 Wilshire Boulevard, Suite 4750, Los Angeles, California 90017 and David R. Francescani, Esq., Darby & Darby, 405 Lexington Avenue, New York, New York 10174, this 8th day of May, 1986.

THOMAS F. REDDY, JR.